

Os Acromiale

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Softball Pitcher” ref_num: 21 evidence_tier: paper evidence_level: 4 doi: 10.1177/0363546506288305 year: 2006 - title: “Reverse shoulder arthroplasty with os acromiale” ref_num: 24 evidence_tier: paper evidence_level: 4 doi: 10.5397/cise.2019.00409 year: 2020 synthesis_version: “v2” verifier_status: skipped

Overview

- In Thai patients with shoulder problems requiring MRI evaluation, the prevalence of os acromiale was 2.13% [1].
- Os acromiale is associated with rotator cuff injuries [5].
- A multicenter study aimed to determine the prevalence of and factors associated with os acromiale in the Japanese population [6].
- Operative management of a symptomatic os acromiale that has failed initial nonoperative treatment leads to decreased symptoms and improvement in clinical outcomes [2].
- Surgical options for symptomatic os acromiale include arthroscopic sub-total excision [16].
- Surgical options for symptomatic os acromiale include arthroscopic subacromial decompression of stable fragments [16].
- Surgical options for symptomatic os acromiale include open reduction and internal fixation of unstable fragments [16].
- Surgical treatment is usually not indicated for os acromiale in the professional tennis player [7].
- Ipsilateral os acromiale may be a relative contraindication to the clavicle hook plate [12].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients after reverse total shoulder arthroplasty [3].
- Postoperative local tenderness at the os acromiale resolves spontaneously over time in the majority of patients after reverse total shoulder arthroplasty [3].
- The presence of os acromiale does not appear to have a negative impact on clinical outcomes after reverse total shoulder arthroplasty [4].
- The outcome of reverse total shoulder arthroplasty does not seem to be negatively affected by the presence of an os acromiale [9].

Anatomy & Pathophysiology

- The prevalence of os acromiale in Thai patients with shoulder problems requiring MRI evaluation is 2.13% [1].
- Os acromiale is associated with rotator cuff injuries [5].
- A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site [8].

- Fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting [10].
- Awareness of the os acromiale in the young athlete is crucial to confirm diagnosis through appropriate clinical examination and image studies [11].
- The synchondrosis of an os acromiale can be injured following trauma, though rarely [13].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients after reverse total shoulder arthroplasty [3].
- Postoperative local tenderness at the os acromiale resolves spontaneously over time in the majority of patients [3].
- The presence of os acromiale does not appear to have a negative impact on clinical outcomes after reverse total shoulder arthroplasty [4].
- The outcome of reverse total shoulder arthroplasty does not seem to be negatively affected by the presence of an os acromiale [9].
- Reverse shoulder arthroplasty improves range of motion, decreases pain, and increases patient satisfaction in patients with os acromiale and cuff tear arthropathy [24].
- Surgical treatment is usually not indicated for os acromiale in the professional tennis player [7].

Classification

- The prevalence of os acromiale in Thai patients with shoulder problems requiring MRI evaluation is 2.13% [1].
- Os acromiale is associated with rotator cuff injuries [5].
- A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site [8].
- Fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting [10].
- Awareness of the os acromiale in the young athlete, appropriate clinical examination, and image studies are crucial to confirm diagnosis [11].
- The synchondrosis of an os acromiale can be injured following trauma, though rarely [13].
- Meta-os acromiale is the rarest subtype of os acromiale [15].

Clinical Presentation

- The prevalence of os acromiale in Thai patients with shoulder problems requiring MRI evaluation was 2.13% [1].
- Os acromiale is associated with rotator cuff injuries [5].

- A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site [8].
- The presence of os acromiale does not appear to have a negative impact on clinical outcomes after reverse total shoulder arthroplasty (rTSA) [4].
- The outcome of reverse total shoulder arthroplasty (RTSA) does not seem to be negatively affected by the presence of an os acromiale [9].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients following rTSA [3].
- Postoperative local tenderness at the os acromiale resolves spontaneously over time in the majority of patients [3].
- Surgical treatment is usually not indicated for os acromiale in professional tennis players [7].
- Awareness of the os acromiale, appropriate clinical examination, and image studies are crucial to confirm diagnosis in young athletes [11].
- Ipsilateral os acromiale may be a relative contraindication to the clavicle hook plate [12].
- The synchondrosis of an os acromiale can be injured following trauma, though rarely [13].
- Fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting [10].
- Meta-os acromiale is the rarest subtype of os acromiale [15].
- Liberson reviewed 1800 shoulder girdles and identified an incidence of os acromiale of 1.4% [14].
- The lesion of os acromiale is bilateral in 62% of patients according to Liberson's review [14].

Investigations

- The prevalence of os acromiale in Thai patients with shoulder problems requiring MRI evaluation is 2.13% [1].
- Os acromiale is associated with rotator cuff injuries [5].
- A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site [8].
- Awareness of the os acromiale in the young athlete, appropriate clinical examination, and image studies are crucial to confirm diagnosis [11].
- The synchondrosis of an os acromiale can be injured following trauma, though rarely [13].
- Appropriate radiographic investigation for os acromiale injury includes axillary views [13].
- Fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting [10].
- Liberson reviewed 1800 shoulder girdles and identified an incidence of os acromiale of 1.4% [14].
- The lesion of os acromiale is bilateral in 62% of patients according to Liberson's review [14].

Treatment

- Operative management of a symptomatic os acromiale that has failed initial nonoperative treatment leads to decreased symptoms and improvement in clinical outcomes [2].
- Surgical options for symptomatic os acromiale include arthroscopic sub-total excision, arthroscopic subacromial decompression of stable fragments, and open reduction and internal fixation of unstable fragments [16].
- Open reduction and internal fixation using cannulated screws or tension band wiring have superior outcomes in the literature in the treatment of symptomatic os acromiale [19].
- A new arthroscopic technique of fixation of os acromiale with absorbable screws provides promising clinical, cosmetic, and radiologic results with high patient satisfaction [17].
- A symptomatic os acromiale in a competitive female fastball pitcher was treated successfully with open reduction and internal fixation [21].
- Special consideration must be given to the type of tension-band construct used to achieve adequate compression and fixation for meta-os acromiale, the rarest subtype of os acromiale [15].
- Surgical treatment is usually not indicated for os acromiale in the professional tennis player [7].
- Ipsilateral os acromiale may be a relative contraindication to the clavicle hook plate [12].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients but resolves spontaneously over time in the majority of patients [3].
- The presence of os acromiale does not appear to have a negative impact on the clinical outcomes after reverse total shoulder arthroplasty (rTSA) [4].
- The outcome of reverse total shoulder arthroplasty (RTSA) does not seem to be negatively affected by the presence of an os acromiale [9].

Complications

- The prevalence of os acromiale in Thai patients with shoulder problems requiring MRI evaluation was 2.13% [1].
- Operative management of a symptomatic os acromiale that has failed initial nonoperative treatment leads to decreased symptoms and improvement in clinical outcomes [2].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients following reverse total shoulder arthroplasty [3].
- Postoperative local tenderness at the os acromiale resolves spontaneously over time in the majority of patients [3].
- The presence of os acromiale does not appear to have a negative impact on clinical outcomes after reverse total shoulder arthroplasty [4].
- Reverse total shoulder arthroplasty remains a safe and effective treatment option in the presence of os acromiale [4].

- Os acromiale is associated with rotator cuff injuries [5].
- A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site [8].
- Surgical treatment is usually not indicated for os acromiale in professional tennis players [7].
- Fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting [10].
- The incidence of os acromiale identified by Liberson was 1.4% [14].
- The lesion of os acromiale was bilateral in 62% of patients in Liberson's review [14].

Recovery

- Operative management of a symptomatic os acromiale that has failed initial nonoperative treatment leads to decreased symptoms and improvement in clinical outcomes [2].
- Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients but resolves spontaneously over time in the majority of patients [3].
- The presence of os acromiale does not appear to have a negative impact on the clinical outcomes after reverse total shoulder arthroplasty (rTSA) [4].
- Reverse total shoulder arthroplasty (rTSA) remains a safe and effective treatment option in patients with os acromiale [4].
- The outcome of reverse total shoulder arthroplasty (RTSA) does not seem to be negatively affected by the presence of an os acromiale [9].
- Surgical treatment is usually not indicated for os acromiale in professional tennis players [7].

Key Evidence

- [L3] In Thai patients with shoulder problems who required MRI evaluation, the prevalence of os acromiale was 2.13%. ([10.1177/23259671221078806](https://doi.org/10.1177/23259671221078806))
- [L4] Operative management of a symptomatic os acromiale that has failed initial nonoperative treatment leads to decreased symptoms and improvement in clinical outcomes. ([10.1016/j.jse.2019.05.047](https://doi.org/10.1016/j.jse.2019.05.047))
- [L3] Postoperative local tenderness at the os acromiale can be expected in 1 out of 4 patients but resolves spontaneously over time in the majority of patients. ([10.1177/2325967120965131](https://doi.org/10.1177/2325967120965131))
- [L4] The presence of os acromiale does not appear to have a negative impact on the clinical outcomes after surgery and rTSA remains a safe and effective treatment option. ([10.1016/j.xrrt.2025.01.002](https://doi.org/10.1016/j.xrrt.2025.01.002))
- [L3] The study supports previous findings that os acromiale is associated with rotator cuff injuries. ([10.1016/j.jseint.2025.05.015](https://doi.org/10.1016/j.jseint.2025.05.015))
- [L3] This multicenter study aimed to determine the prevalence of and factors associated with os acromiale in the Japanese population. ([10.1016/j.jse.2025.01.008](https://doi.org/10.1016/j.jse.2025.01.008))

- [L4] Surgical treatment is usually not indicated for os acromiale in the professional tennis player. ([10.1177/2325967118773723](https://doi.org/10.1177/2325967118773723))
- [L4] A tear of the rotator cuff may often be associated with os acromiale, likely due to impingement from abnormal motion at the fibrous union site. ([10.2106/00004623-198466080-00029](https://doi.org/10.2106/00004623-198466080-00029))
- [L4] The outcome of RTSA does not seem to be negatively affected by the presence of an os acromiale. ([10.1016/j.jse.2017.02.012](https://doi.org/10.1016/j.jse.2017.02.012))
- [L4] An anatomical study showed that fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting. ([10.2106/00004623-200003000-00010](https://doi.org/10.2106/00004623-200003000-00010))
- [L4] Awareness of the os acromiale in the young athlete, appropriate clinical examination, and image studies are crucial to confirm diagnosis. ([10.1016/j.jseint.2020.02.008](https://doi.org/10.1016/j.jseint.2020.02.008))
- [L4] Ipsilateral os acromiale may be a relative contraindication to the clavicle hook plate. ([10.1186/s12891-021-04841-1](https://doi.org/10.1186/s12891-021-04841-1))
- [L4] This case highlights that the synchondrosis of an os acromiale can be injured following trauma, though rarely, and emphasizes the need for appropriate radiographic investigation including axillary views and a flexible surgical approach. ([10.1016/j.jse.2008.02.012](https://doi.org/10.1016/j.jse.2008.02.012))
- [L4] Meta-os acromiale is the rarest subtype of os acromiale, and special consideration must be given to the type of tension-band construct used to achieve adequate compression and fixation. ([10.1177/03635465211028238](https://doi.org/10.1177/03635465211028238))
- [L5] Surgical options for symptomatic os acromiale include arthroscopic sub-total excision, arthroscopic subacromial decompression of stable fragments, and open reduction and internal fixation of unstable fragments. ([10.5435/jaaos-d-17-00011](https://doi.org/10.5435/jaaos-d-17-00011))
- [L4] This new arthroscopic technique of fixation of os acromiale with absorbable screws provides promising clinical, cosmetic, and radiologic results with high patient satisfaction. ([10.1016/j.jse.2011.12.011](https://doi.org/10.1016/j.jse.2011.12.011))
- [L4] Open reduction and internal fixation using cannulated screws, or tension band wiring have superior outcomes in the literature in the treatment of symptomatic os acromiale. ([10.1302/2058-5241.4.180100](https://doi.org/10.1302/2058-5241.4.180100))
- [L4] A symptomatic os acromiale in a competitive female fastball pitcher was treated successfully with open reduction and internal fixation. ([10.1177/0363546506288305](https://doi.org/10.1177/0363546506288305))
- [L4] Reverse shoulder arthroplasty improved ROM, decreased pain, and increased patient satisfaction in patients with os acromiale and cuff tear arthropathy. ([10.5397/cise.2019.00409](https://doi.org/10.5397/cise.2019.00409))

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DOI: 10.1016/j.xrrt.2025.01.002 [5] Prevalence and factors associated with os acromiale: a multicenter study. *JSES International*. 2025. DOI: 10.1016/j.jseint.2025.05.015 [6] The prevalence and associated factors of os acromiale: a multicenter study. *Journal of Shoulder and Elbow Surgery*. 2025. DOI: 10.1016/j.jse.2025.01.008 [7] Os Acromiale in Professional Tennis Players. *Orthopaedic Journal of Sports Medicine*. 2018. DOI: 10.1177/2325967118773723 [8] Rotator cuff tears associated with os acromiale.. *The Journal of Bone & Joint Surgery*. 1984. DOI: 10.2106/00004623-198466080-00029 [9] Reverse shoulder arthroplasty in patients with os acromiale. *Journal of Shoulder and Elbow Surgery*. 2017. DOI: 10.1016/j.jse.2017.02.012 [10] Os Acromiale: Frequency, Anatomy, and Clinical Implications. *The Journal of Bone and Joint Surgery-American Volume*. 2000. DOI: 10.2106/00004623-200003000-00010 [11] *The unstable os acromiale: a cause of pain in the young athlete*. *JSES International*. 2020. DOI: 10.1016/j.jseint.2020.02.008 [12] *Os acromiale may be a contraindication of the clavicle hook plate: case reports and literature review*. *BMC Musculoskeletal Disorders*. 2021. DOI: 10.1186/s12891-021-04841-1 [13] *Fracture of an os acromiale with associated rupture of the coracoclavicular ligaments*. *Journal of Shoulder and Elbow Surgery*. 2008. DOI: 10.1016/j.jse.2008.02.012 [14] *Types of os acromiale according to Liberson*. 2006. [15] *Rare Symptomatic Meta-Os Acromiale in an Athlete*. *The American Journal of Sports Medicine*. 2021. DOI: 10.1177/03635465211028238 [16] *Symptomatic, Unstable Os Acromiale*. *Journal of the American Academy of Orthopaedic Surgeons*. 2018. DOI: 10.5435/jaaos-d-17-00011 [17] *Arthroscopically assisted internal fixation of the symptomatic unstable os acromiale with absorbable screws*. *Journal of Shoulder and Elbow Surgery*. 2012. DOI: 10.1016/j.jse.2011.12.011 [19] *Os acromiale: a review of its incidence, pathophysiology, and clinical management*. *EFORT Open Reviews*. 2019. DOI: 10.1302/2058-5241.4.180100 [21] *Surgical Stabilization of Os Acromiale in a Fast-Pitch Softball Pitcher*. *The American Journal of Sports Medicine*. 2006. DOI: 10.1177/0363546506288305 [24] *Reverse shoulder arthroplasty with os acromiale*. *Clinics in Shoulder and Elbow**. 2020. DOI: 10.5397/cise.2019.00409